This one when told how to do seems easy but it is quite hard to do.
To do this all you have to do is sublimely tell them which one they are going to pick (easy enough). The way derren does this is by making “subconscious” signals to the subject to tell him to pick the one he is signalling.
E.g. on derren brown; mind control 2 when he does this effect he says to the subject
“**We’ll play paper scissors stone where you go 1 2 3** (hits his fist on his other hand 3 times) **and then you do something** (does scissors)”
This sublimely tells the subject to choose scissors. And sure enough the subject chooses scissors and derren chooses rock to win.
Then on the second go the subject chooses rock (as you can see this was derrens last choice) and derren chooses paper to win.
And finally on the last go the subject chooses paper (derrens last choice) and derren chooses scissors to win.

You may wonder how he did it when he asked if the audience want him to win loose or draw. Well, this was the same as above apart from he asked “**do you want me to win loose or draw** (making paper sign for subliminal signal)” so if the audience say win he chooses scissors if they say loose he chooses rock and if they say draw then de chooses paper.

NOTE: when doing the effect try and make the person look at you hand (not by saying, “look at my hand” because then they will know that you are up to something). Just try casually leading their eyes down with your eyes or at least making sure the signal is in their line of vision. Also after you play each game, and you see who wins leave your hand out longer than theirs so then they subconsciously get the picture of which one they should pick.